

REMARKS

I. Status of the Claims

Claims 1-71 are pending. Claims 60-71 are withdrawn as directed to non-elected subject matter. No claim is amended in this response. Accordingly, there is no issue of new matter.

Applicant respectfully acknowledges the Examiner's withdrawal of the rejection of claims 1-59 under 35 U.S.C. § 103 over the combination of U.S. Patent No. 4,927,627 (the '627 patent) and PG PUB 20040074015. See July 10, 2008 Office Action at page 2.

II. Rejection under 35 U.S.C. § 103(a) over '627 in view of '476 and '118

The Examiner rejects claims 1-59 under 35 U.S.C. § 103(a) as being allegedly "unpatentable over" the combination of U.S. Patent No. 4,927,627 ('627), U.S. Patent No. 6,645,476 ('476), and U.S. Patent No. 6,180,118 ('118). Office Action at 3.

Applicant respectfully traverses for at least the following reasons.

With respect to obviousness, several basic factual inquiries must be made in order to determine the obviousness or non-obviousness of claims under 35 U.S.C. § 103. These factual inquiries, set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459, 467 (1966), require the Examiner to:

- (1) Determine the scope and content of prior art;
- (2) Ascertain the differences between the prior art and the claims in issue;
- (3) Resolve the level of ordinary skill in the pertinent art; and
- (4) Evaluate evidence of secondary considerations.

The obviousness or non-obviousness of the claimed invention is then evaluated in view of the results of these inquiries. *Graham*, 383 U.S. at 17-18, 148 U.S.P.Q. at 467; see also *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1730, 82 U.S.P.Q.2d 1385, 1388 (2007).

Indeed, to establish a *prima facie* case of obviousness, the examiner must:

make a determination whether the claimed invention “as a whole” would have been obvious at that time to that person. Knowledge of applicant’s disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the “differences,” conduct the search and evaluate the “subject matter as a whole” of the invention.

M.P.E.P. § 2142, 8th Ed., Rev. 6 (Sept. 2007). “The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.” *Id.* It is important to note, moreover, that the prior art references relied upon in a rejection “must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention,” when such reasons are articulated by the Examiner. *Graham*, 383 U.S. at 17, 148 U.S.P.Q. at 467; See also M.P.E.P. § 2141.03(VI) (emphasis added).

Applicant respectfully submits that such reasons are not present in the rejection of record at least because the references relied upon by the Examiner, when considered as a whole, provide no reason that would have prompted a person of ordinary skill in the art to modify and combine the references in the manner suggested by the Examiner. In fact, for the reasons set forth below, Applicant submits that the references, when considered in their entirety, include portions that would discourage the modification and combination suggested by the Examiner.

The Examiner states that “[a]pplicant’s [sic] do not address the rejection with respect to the primary reference, which is patent 4,927,627 (‘627) instead applicant’s [sic] argue about patent ‘476 and ‘118 and then point out at page 9, why one skilled in the art would not combine the ‘627 patent.” July 10, 2008 Office Action at page 6 (emphasis omitted). Applicant respectfully submits that Applicant’s arguments as to why one of ordinary skill in the art would not consider the relevant polymers of the ‘476 and ‘118 patents similar and, consequently, why one of ordinary skill in the art would not have an expectation of success in combining elements from the ‘627, ‘476, and ‘118 patents, provide reasoned support for why the claimed invention would not have been obvious. However, in response to Examiner’s statement, Applicant additionally points out further reasons why the claims were not obvious at the time of invention.

The Examiner appears to be employing the “obvious to try” rationale, stating that it would have been obvious to one of ordinary skill in the art to prepare compositions of the ‘627 patent “and substitute the thickener of [‘627] with the thickener of ‘476” because there would have been a “reasonable expectation of success that substituting the thickener of [‘627] with the thickener of ‘476 would yield the same predictable results” See July 10, 2008 Office Action at page 6.¹ However, an “obvious to try” finding of obviousness requires “a finite number of identified, predictable solutions.” *KSR*, 127 S.Ct. at 1732. In contrast, the ‘476 patent discloses hundreds, if not thousands, of possible thickeners. Such numbers can hardly be considered “finite” as envisioned by

¹ The Examiner cites ‘427 in her rejection conclusion, but as there is no “‘427” reference cited, Applicant assumes that the Examiner means ‘627.

the Supreme Court in *KSR*. Further, Applicant respectfully submits that the patents themselves “lead away” from the substitution the Examiner proposes.²

The essential characteristic of the thickening agents disclosed in the ‘627 patent is that they comprise a “carboxyl-containing polymer or copolymer.” See, e.g., ‘627 patent, col. 1, ll. 59-61. These “carboxyl-containing polymers” must also be soluble in aqueous alkali. See, e.g., col. 1, ll. 59-62. The disclosure of the ‘627 patent involves the thorough mixing of (1) an oil-in-water emulsion containing, *inter alia*, hydrogen peroxide and the carboxyl-containing thickening agent at an acidic pH (“about 2 to 5,” col. 2, ll. 20-21) with (2) an “oxidation hair dying cream” or “bleaching cream” oil-in-water emulsion at basic pH (“8 to 11,” col. 3, ll. 43-44, 49-52) to form a mixture with pH value of approximately 8. See ‘627 patent, col. 2, ll. 30-33; col. 3, ll. 58-68. In mixing the emulsions to create a mixture with a basic pH, the carboxyl groups of the thickening agent “are consequently converted to the salt form, which permits the polymer chains to uncoil and pass into solution with the result that the aqueous solution exhibits and increase in viscosity.” ‘627 patent, col. 2, ll. 26-30. Prior to mixing and the subsequent increase in viscosity, the viscosity of the thickening agent containing emulsion is a “low” value to “facilitate rapid and homogeneous mixing with the hair dyeing or bleaching cream.” ‘627 patent, col. 1, ll. 37-39; col. 2, l. 19. In other words, the ‘627 patent teaches “a value of from 0.5 to 2 Pa.s” (500 to 2,000 mPa.s) at 20° C. ‘627 patent, col. 2, ll. 40-44. As a result of the “dissolution of the carboxyl group-containing polymer”

² Additionally, Applicant notes that “thickener” is not the purpose for the presence of the amphiphilic polymer in Applicant’s invention as noted by Applicant’s instant specification.

after mixing, the viscosity is increased to be "suitable for application to the hair." '627 patent, col. 3, ll. 64-68.

The Examiner concedes that the '627 patent does not disclose the amphiphilic polymers of Applicant's invention (July 10, 2008 Office Action at page 4), but instead argues that the '476 patent teaches the amphiphilic polymers by describing compositions comprising a copolymer wherein one comonomer is acrylamido propyl methyl sulfonic acid (AMPS) and the other comonomer is "chosen from esters of methacrylic acid with alkyl ethoxylates which include 5-80 ethylene oxide units and 10-11 carbon alkyl radicals," which is the "same [as] described at pages 10-11 of the [Applicant's] instant specification." July 10, 2008 Office Action at pages 4 and 8. The Examiner concludes that because the '476 "[p]atent under [its] abstract teaches that these [co]polymers are suitable as thickeners" from among a laundry list of possible uses, "one of ordinary skill in the art would have reasonable expectation of success that substituting thickener of ['627] with the thickener of '476 would yield the same predictable results." July 10, 2008 Office Action at pages 5 and 6.

But, Applicant respectfully points out that the copolymers from the '476 patent which the Examiner points to as the "thickeners" to substitute into the '627 patent, lack the carboxyl group required by the '627 patent of its "thickening agent." As discussed, the required carboxyl groups are essential to the operation of the invention of the '627 patent. The disclosure of the '627 patent does not motivate, but actually leads away from substituting the copolymers selected from the '476 patent by the Examiner which do not contain a carboxyl group.

The fact that a person of ordinary skill in the art would not substitute the “thickening agent” of the ‘627 patent with the “thickeners” of the ‘476 patent is further evidenced by the differences in viscosity. As the Examiner points out, the ‘476 patent teaches the viscosities of its copolymer solution are from 20,000 mPas to 100,000 mPas, in particular 60,000 mPas to 70,000 mPas. July 10, 2008 Office Action at page 4; ‘476 patent, col. 4, ll. 51-53. The ‘476 patent notes that “[e]ven at room temperature, such polymers exhibit high thickener performance.” ‘476 patent, col. 4, ll. 53-54. This is in stark contrast to the “low” viscosities of 500 to 2,000 mPa.s for the hydrogen peroxide and “thickening agent” preparation in the ‘627 patent discussed above. Further, the invention of the ‘627 patent relies on this initial low viscosity followed by an increased viscosity after mixing for the effective operation of the hair dying or bleaching preparations that are the invention. Consequently, one of ordinary skill in the art would not have a reasonable expectation of success in combining the disclosure selected by the Examiner from the ‘476 patent with the ‘627 patent and would not have found such a combination to be obvious.

As regards the Examiner’s combination of teachings from the ‘476 and ‘118 patents to support the combination of the ‘627 and ‘476 patents, the Examiner again states that the ‘476 patent “teaches compositions comprising a copolymer wherein one comonomer is acrylamido propyl methyl sulfonic acid (AMPS) or its salts (elected ethylenically unsaturated monomer containing sulfonic group[]), and one or more macro monomers are chosen from esters of methacrylic acid with alkyl ethoxylates which include 5-80 ethylene oxide units and 10-22 carbon alkyl radicals.” July 10, 2008 Office Action at page 4. The Examiner further states that the ‘118 patent teaches

compositions comprising an amphiphilic polymer which the Examiner asserts "shares close structural similarity having the same ethylenically unsaturated monomer and it is cross linked with the cross linking agent." *Id.* at 8. Applicants respectfully submit that these two references, when considered in their entirety, teach that their respective copolymers differ significantly.

Applicant has previously argued that the '118 patent does not disclose polymers according to the '476 patent because the '118 patent does not disclose AMPS containing polymers with a comonomer comprising "an end-group capable of polymerization, a hydrophobic moiety based on polyalkylene oxides, and a hydrophobic moiety which comprises hydrogen or a saturated or unsaturated, linear or branched, aliphatic, cycloaliphatic or aromatic (C₁-C₃₀)-hydrocarbon radical" ('476 patent at Claim 1, *see also* Abstract). In response, the Examiner contends that the "cross linking monomers of formula 2" in the '118 patent ('118 patent, col. 3, ll. 42-50 (emphasis added)) "satisfies the requirement of patent '476 patent." July 10, 2008 Office Action at page 8. However, cross linking monomers are treated separately in the '476 patent. '476 patent, col. 4, ll. 19-29; compare claims 1 and 6. The comonomers of the '476 patent comprising "an end-group capable of polymerization, a hydrophobic moiety based on polyalkylene oxides, and a hydrophobic moiety which comprises hydrogen or a saturated or unsaturated, linear or branched, aliphatic, cycloaliphatic or aromatic (C₁-C₃₀)-hydrocarbon radical" are not cross-linkers as separately disclosed and separately claimed. Therefore, the '118 patent does not disclose copolymers according to the '476 patent and the structures of the copolymers can differ significantly.

Not only does the '118 patent not disclose copolymers according to the '476 patent, but it would also be clear to one of ordinary skill in the art that the '476 and '118 patents are directed to polymer particles of vastly different sizes. In the final Office Action, the Examiner does not address this further distinction between the '476 and '118 polymers which Applicant previously identified. The '476 patent teaches that in a **representative** embodiment of its invention, 97.4% of the polymer particles are bigger than **45,000 nm** (45 micrometers).³ Thus, AMPS copolymers according to the '476 patent would be entirely unsuitable for use in compositions according to the '118 patent, which teaches the use of polymer particles no larger than **500 nm**.⁴ Even if some tiny fraction of AMPS copolymers according to the '476 patent were smaller than 500 nm, AMPS copolymers according to the '476 patent would still fail to display a homogeneous and unimodal size distribution, as required by the '118 patent. Accordingly, one of ordinary skill in the art would recognize that the '118 and '476 patents are directed to polymer particles which differ greatly not only in their chemical nature, but also in their size, and would thus be expected to have different properties. As a result, one of

³ The '476 patent teaches that "[a] **representative** favorable size distribution is the following particle size distribution, as was determined by screen analysis for an AMPS copolymer: 60.2% smaller than 423 micrometers, 52.0% smaller than 212 micrometers, 26.6% smaller than 106 micrometers, **2.6% smaller than 45 micrometers** and 26.6% larger than 850 micrometers." '476 patent at col. 5, lines 4-9 (emphasis added).

⁴ The '118 patent teaches that "the polymers of the invention contain a number of units of formula (1) in a sufficiently large amount to obtain polymer particles whose hydrodynamic volume in aqueous solution has a radius ranging from **10 to 500 nm** and **whose distribution is homogeneous and unimodal**." '118 patent at col. 3, lines 17-21 (emphasis added), see also Claim 3 of the '118 patent.

ordinary skill in the art would not consider the polymers of the '118 and '476 patents similar.

Accordingly, Applicant submits that the '118 patent would not have provided one of ordinary skill in the art would not have had any expectation for success in combining elements from the '627, '118, and '476 patents at least because the '118 and '476 patents are directed to dissimilar polymers with divergent properties, as set forth above. In fact, the '118 patent teaches against combining the '627 patent (which is directed to oxidizing compositions) and the '476 patent (which is silent on oxidizing compositions) by teaching that AMPS polymers of use in oxidizing compositions are distinctly different from the AMPS copolymers disclosed by the '476 patent.

In view of the above arguments, Applicant submits that the Examiner has not established a prima facie case of obviousness. Thus, the rejection of claims 1-59 under 35 U.S.C. § 103(a) as being unpatentable over the combination of the '627, '476, and '118 patents is in error and should be withdrawn.

III. Provisional Double Patenting Rejection

In the Office Action, the Examiner again provisionally rejects claims 1-59 on the grounds of non-statutory obviousness-type double patenting as being unpatentable over co-pending Application No. 10/451,409 in view of U.S. Patent 4,927,627. Applicant respectfully traverses this provisional rejection, at least because no actual double patenting circumstance can arise until a patent issues from the cited application. Since the above co-pending application is still under consideration, there is the possibility that the claims therein may change. Applicant further requests that any resolution in the

form of a Terminal Disclaimer in compliance with 37 C.F.R. 1.321(c), if necessary, be deferred until such patent issues or allowable subject matter is indicated. Accordingly, Applicant respectfully requests that the Examiner withdraw this provisional rejection of the claims.

Applicant also notes that M.P.E.P. § 804 addresses the situation of two co-pending applications. The section indicates that “[t]he “provisional” double patenting rejection should continue to be made by the examiner in each application ... unless that “provisional” double patenting rejection is the only rejection remaining in one of the applications. If the “provisional” double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the “provisional” double patenting rejection in the other application(s) into a double patenting rejection at the time the one application issues as a patent.” Applicant submits that in view of the foregoing remarks, the provisional double patenting rejection would be the only rejection remaining in this application. For at least this additional reason, Applicant requests that any resolution in the form of submission of a Terminal Disclaimer, if necessary, be deferred.

IV. Conclusion

In view of the foregoing remarks, Applicant respectfully requests reconsideration of this application and timely allowance of the pending claims.


If the Examiner believes a telephone conference could be useful in resolving any of the outstanding issues, she is respectfully invited to contact Applicant's undersigned counsel at (202) 408-4443.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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